Coating Thickness Instruments

ProTek II

S SERIES

User's Guide

ProTek II SF _____

ProTek II SN _____

ProTek II ST _____

1.0 INTRODUCTION

The ProTek II series Coating Thickness Instruments represent the latest technology for the non-destructive measurement of surface coatings on all metals. While they are very easy and convenient to use, the first time user should read this entire manual before operating the instrument to fully utilize its capabilities.

1.1 Applications

MODEL	Application
ProTek II SF	Measures the thickness of all non - magnetic coatings and finishes on iron, steel and other magnetic metal surfaces.
ProTek II SN	Measures the thickness of all non - conductive (non - metallic) coatings and finishes on all non - magnetic metals. Example: Anodizing, paint, powder coatings, plastic, paper on aluminum, brass, bronze, titanium, non - magnetic stainless steel, zinc, etc.
ProTek II ST	**C**ombination of ProTek II SF and ProTek II SN

2.0. EQUIPMENT SUPPLIED

2.1 Standard Accessories

The ProTek II Series Gauges are supplied with the following standard accessories:

a. Bare test plate for setting ZERO calibration.

ProTek II SF supplied with steel plate

ProTek II SN supplied with aluminum plate

ProTek II ST supplied with steel and aluminum plates

b. Two precision plastic shims.

c. One 9-Volt DC **alkaline** battery.

d. ProTek II Series Operating Instruction Manual.

e. Hard plastic carrying case.

3.0. KEYPAD FUNCTIONS

1. Turns the **power on**
2. Turns the **power off**
3. Selects displayed value or displayed sub-menu option

1. Enters calibration mode
2. Increases displayed value in calibration mode
3. Increases number of measurements in CAM mode

1. Enter **CAM** (average) mode.
2. Decreases displayed value in calibration mode
3. Decreases number of measurements in CAM mode

mils-to-micron-to-mils

3.1. Special Key Combinations

Press both keys simultaneously to changes units of measure from mils-to-micron-to-mils

Press both keys simultaneously to reset all settings back to factory defaults

4.0 OPERATING PROCEDURE

4.1 HANDLE PROBE CAREFULLY

4.2 Taking Measurements

1. Press the **ON** key to turn on the power. The LCD will momentarily flash **SABERN** and all of the indicators will be illuminated. The display will then show "-- -- --" along with the selected units of measure indicator:

   a. mils/thou : English

   b. um (microns) : Metric

   To change units of measure press the *key. Refer to section 6.0 for additional details.*

2. Hold the probe by the outer plastic shell and gently press the tip against the surface to be measured. Use enough pressure to cause the outer shell to contact the measurement surface.

   A thickness reading in mils or microns will be displayed.

4.3 Notes on Measurements

1. The gauge will automatically turn the power off after 90 seconds on non-use. To manually turn off the power press the **ON** key.

2. The CTI series are *continuous reading* type gauges which will provide readings as long as the probe is in contact with the surface. When the probe is removed, the **minimum** reading that was measured will be recalled to the display and will be retained until a new measurement is taken.

5.0 CALIBRATION

5.1 Introduction

The ProTek II series normally do not require calibration before use. However, whenever the product or part to be checked varies greatly from the supplied test plate, in either shape or thickness, it is best to check or verify the calibration using an uncoated sample of the actual product or part and using one of the plastic calibration shims provided.

Check the calibration as noted in section 5.2, and change the calibration, if necessary, following the procedure in section 5.3. If a calibration change is necessary, continue to use the bare part instead of the supplied test plate.

5.2 Checking Calibration

1. Turn the power on by pressing the **ON** key.
2. Holding the probe by its outer plastic shell, place the tip on the uncoated metal part. Gently push the probe shell until it contact the bare surface.
    a. If the display shows near **0.00,** proceed to no. 3
    b. If the display shows a reading more than 0.03 mils (0.8 um) on non-magnetic metals or more than 0.01 mils(0.2 um) on magnetic metals, proceed no further since the calibration must be changed.
3. Place one of the plastic calibration shims on top of the bare metal part, place the probe tip on top of the shim and metal part and measure the thickness of the shim. If the displayed thickness *matches* the thickness value noted on the shim(within the accuracy limit) the calibration is verified.

THE GAUGE IS NOW READY FOR USE.

5.3 Changing Calibration

1. Turn the power on by pressing the **ON** key.
2. Press the key to start the calibration.

Setting The "ZERO" Point

3. After pressing the key, the display will flash "**2 PT CAL"** followed by "**00 PLATE"**. An audible "beep" will also be heard. Place the probe on the bare metal part and press until the shell contacts the surface.

4. The display will show "CAL" on the left and a thickness reading (near zero) on the right. Remove the probe from the bare metal surface.

5. The display will then show "MORE/SEL" and will "beep".
   a. At this point you can continue to take additional "ZERO" measurements to use an averaged ZERO calibration. **This is recommended when the surface of the bare metal part is rough or uneven.**
   b. Otherwise press the **ON** key to continue.

Setting the "Calibration" (2nd) Point

6. The display will flash "**W/SHIM**" and continue to "beep". Place the plastic shim on the same bare metal and measure the shim's thickness.

7. The display will show "**ADJC**" along with a thickness reading. Note the reading and determine if it matches the thickness value marked on the shim.

   If the displayed reading does not match the shim's thickness, use the or keys to increase or decrease the displayed value until it matches the value marked on the plastic shim.

8. When the displayed value was adjusted to the value marked on the shim, press the **ON** key. The display will flash "**COMPLETE**" and then "**-- -- --**".

The calibration is now complete and you are ready to take measurements.

6.0 CHANGING UNITS OF MEASURE

To change the units of measure from mils to microns, and vice versa, press the 0N + − key.

Each time this combination of keys are pressed the units will change from one to the other. The unit of measure indicator, located in the upper right corner of the display, will also change.

7.0 CAM MODE

(COUNTED AVERAGE MEASUREMENT)

The **C**ounted **A**verage **M**easurement mode is a special feature which permits the user to take a series of consecutive measurements (from 2 to 99) which are then averaged.

Enter CAM Mode

1- Press the − key .

The display will show "**CAM MODE**"

2- Press the + key. The display will show "**CAM 2**"

3. Press + or − key to increase or decrease the number of measurements. Once the desired number of measurements is shown on the display (for example: "**CAM 7**"), press the **ON** key. The display will show "**-- -- --**" and the **CAM** indicator will be displayed.

NOW, THE GAUGE IS READY TO MEASURE **7** CONSECUTIVE MEASUREMENTS AND DISPLAY THE AVERAGE OF THE **7** READINGS.

After the first measurement is taken, a number will appear on the left side of the display along with the thickness reading on the right. The number on the left indicates the number of measurements that must be taken to complete the current series for the CAM average. Thus, each time a measurement is taken, the number on the left decreases by one.

The CAM indicator on the top of the display will flash on and off indicating that a CAM series is in progress. When the final measurement of the series is taken, the gauge will "beep" then the CAM average is display on the right and the average symbol "**<X>** **"** on the left and the CAM indicator stops flashing.

To begin another series with the same number of readings, just begin measuring. This process can be repeated as many times as desired.

To begin another series using different number of readings, repeat the step 1 to step 3.

Turning off CAM Mode

1- Enter into CAM mode. "**CAM MODE**" appears on the display.

2- Press the (−) key. "**CAM OFF**" appears on the display.

3- Press the **ON** key. "**-- -- --**" will appear on the display and the **CAM** indicator disappears.

Exit CAM Mode

1- Enter into CAM mode. "**CAM MODE**" appears on the display.

2- Press the (−) key. "**CAM OFF**" appears on the display.

3- Press the (−) key again. "**CAM EXIT**" appears on the display.

4- Press the **ON** key. The gauge enters to its previous setup without any changes

8.0 CHANGING THE BATTERY.

When a battery indicator appears on top of the display, replace the battery.

Battery life is approximately 6 months when the ProTek II series gauges are used for about 80 readings per day.

BATTERY TYPE:

Any high quality 9 volt ALKALINE battery.

FOR TECHNICAL ASSISTANCE

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